

**WHAT IS CLAIMED IS:**

1           1.       A system for managing projector bulb life, the system comprising:  
2           a luminance sensor disposed to sense the luminance of the projector bulb;  
3           a luminance controller interfaced with the luminance sensor and a power  
4           driver of the projector bulb, the luminance controller operable to  
5           reduce the power driver output to limit projector bulb luminance at or  
6           below a setpoint level associated with a desired projector bulb life if  
7           the maximum luminance of the projector bulb is greater than a  
8           predetermined brightness.

1           2.       The system of Claim 1 wherein the luminance controller is further  
2           operable increase power driver output to maintain projector bulb luminance  
3           substantially at the setpoint level if the sensed luminance falls to a predetermined  
4           brightness.

1           3.       The system of Claim 1 further comprising a switch disposed between  
2           the power driver and the luminance controller, the switch operable to selectively  
3           disable the projector bulb luminance controller interface with the power driver.

1           4.       The system of Claim 1 wherein the projector bulb comprises an ultra  
2           high pressure mercury vapor bulb.

1           5.       The system of Claim 1 wherein the projector bulb comprises a xenon  
2           halogen bulb.

1           6.       The system of Claim 1 wherein the luminance sensor comprises an  
2           infrared sensor associated with an infrared filter of the projector.

1           7.       The system of Claim 1 wherein the luminance sensor comprises a  
2           visible light sensor aligned to sense light leakage from a mirror of the projector.

1           8.     A method for managing projector bulb life, the method comprising:  
 2           sensing the luminance of the projector bulb;  
 3           determining that the sensed luminance exceeds a luminance threshold  
 4                   associated with a desired projector bulb life; and  
 5           reducing the power applied to the projector bulb to reduce the luminance of  
 6                   the projector bulb to at or below the luminance threshold associated  
 7                   with the desired projector life.

1           9.     The method of Claim 8 further comprising:  
 2           determining that the sensed luminance falls below a luminance threshold  
 3                   associated with a minimum desired available luminance at a maximum  
 4                   brightness setting; and  
 5           increasing the power applied to the projector bulb to increase the luminance of  
 6                   the projector bulb to the luminance threshold of the minimum desired  
 7                   luminance for the maximum brightness setting.

1           10.    The method of Claim 9 wherein the luminance threshold associated  
 2           with a desired projector bulb life and the luminance threshold associated with  
 3           minimum desired available luminance are substantially equal when the projector is set  
 4           at maximum brightness.

1           11.    The method of Claim 8 further comprising engaging a switch to  
 2           override the reducing of the power applied to the projector bulb so that the luminance  
 3           exceeds the threshold.

1           12.    The method of Claim 8 further comprising:  
 2           passing the light from the projector bulb through an infrared filter;  
 3           wherein sensing the luminance further comprises sensing the infrared light at  
 4                   the infrared filter.

1           13.    The method of Claim 8 further comprising:  
2           passing the light from the projector bulb through a first aperture to a  
3                    colmunator for illuminating an image;  
4           passing the light from the projector bulb through a second aperture to a  
5                    luminance sensor for sensing the luminance.

1           14.    The method of Claim 8 wherein the bulb provides light for a digital  
2    mirror device projector having a color wheel, and wherein sensing the luminance  
3    further comprises sensing luminance at the color wheel.

1           15.    The method of Claim 8 wherein the bulb provides light for a digital  
2    mirror device projector having a mirror for projecting an image, and wherein sensing  
3    the luminance further comprises sensing luminance of light leakage at the mirror.

1           16.    A projector for display of information, the projector comprising:  
2           an image operable to display the information;  
3           a bulb operable to provide light to illuminate the image;  
4           a power driver interfaced with the bulb and operable to provide selectable  
5                    variable power to illuminate the image with selectable variable  
6                    luminance;  
7           a luminance sensor disposed to sense the luminance of the bulb; and  
8           a luminance feedback controller interface with the power driver and the  
9                    luminance sensor, the luminance feedback controller operable to  
10                  control power applied by the power driver according to the luminance  
11                  sensed by the luminance sensor to achieve a predetermined bulb  
12                  parameter.

1           17.    The projector of Claim 17 wherein the luminance feedback controller  
2    achieves a desired bulb life by limiting power applied by the power driver to restrict  
3    luminance sensed by the luminance sensor at or below a predetermined setpoint.

1           18.     The projector of Claim 17 wherein the luminance feedback controller  
2 achieves a desired maximum available luminance from the bulb by increasing power  
3 applied by the power driver to increase luminance sensed by the luminance sensor at  
4 or above a predetermined setpoint when the selected luminance exceeds a  
5 predetermined level.

1           19.     The projector of Claim 17 further comprising a switch interfaced with  
2 the luminance feedback controller and operable to disengage control by the luminance  
3 feedback controller of the power driver.

1           20.     The projector of Claim 17 wherein the image comprises output of a  
2 digital mirror device.